

Headquarters U.S. Air Force

Integrity - Service - Excellence

Business Case Analysis



SAF/AQXA

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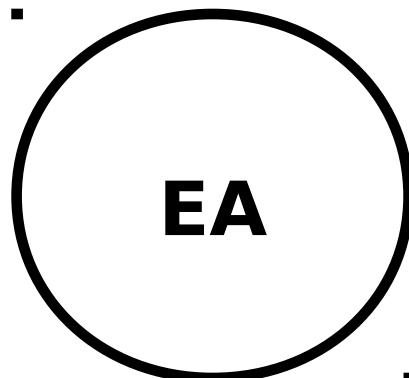
Overview

- **What is a Business Case Analysis (BCA)?**
- **Structure of a Business Case**
- **Business Case Example**
- **How to Market your Business Case**
- **Tools and Processes**
- **Summary**

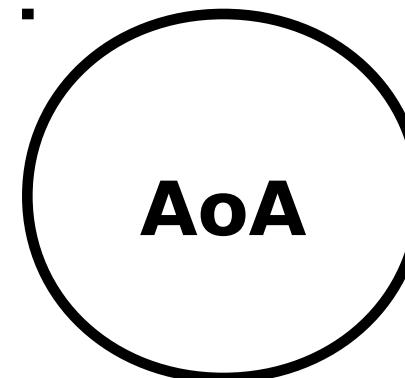


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What Is A Business Case?



Economic Analysis



Analysis of Alternatives



Cost as An
Independent
Variable
(CAIV)

Business Case Analysis

Method of Documenting Economic Value of Investment



Structure of a Business Case

What are the Key Components of a Business Case?

Commercial Elements

- **Introduction & Overview**
- **Assumptions & Methods**
- **Business Impacts**
- **Sensitivity & Risk Analysis**
- **Conclusions & Recommendations**

DoD Elements

- **Implementation Plan**
- **Investment**
- **Savings**
- **Risk Assessment**
- **Metrics**

Revenue vs Budget



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Building a Business Case

Weapon System
Cost Baseline

1. Knowledge of Costs

- AF Total Ownership Cost Data System

ID High
Cost Drivers

New Initiative
BCA

Program Office

MAJCOM

Cost Savings
Initiative

Corp AF

2. Develop Initiatives

Economic Analysis -

- Investment/Savings
- NPV, Savings-Investment R
- RTOC Business Case Analysis (BCA) Template

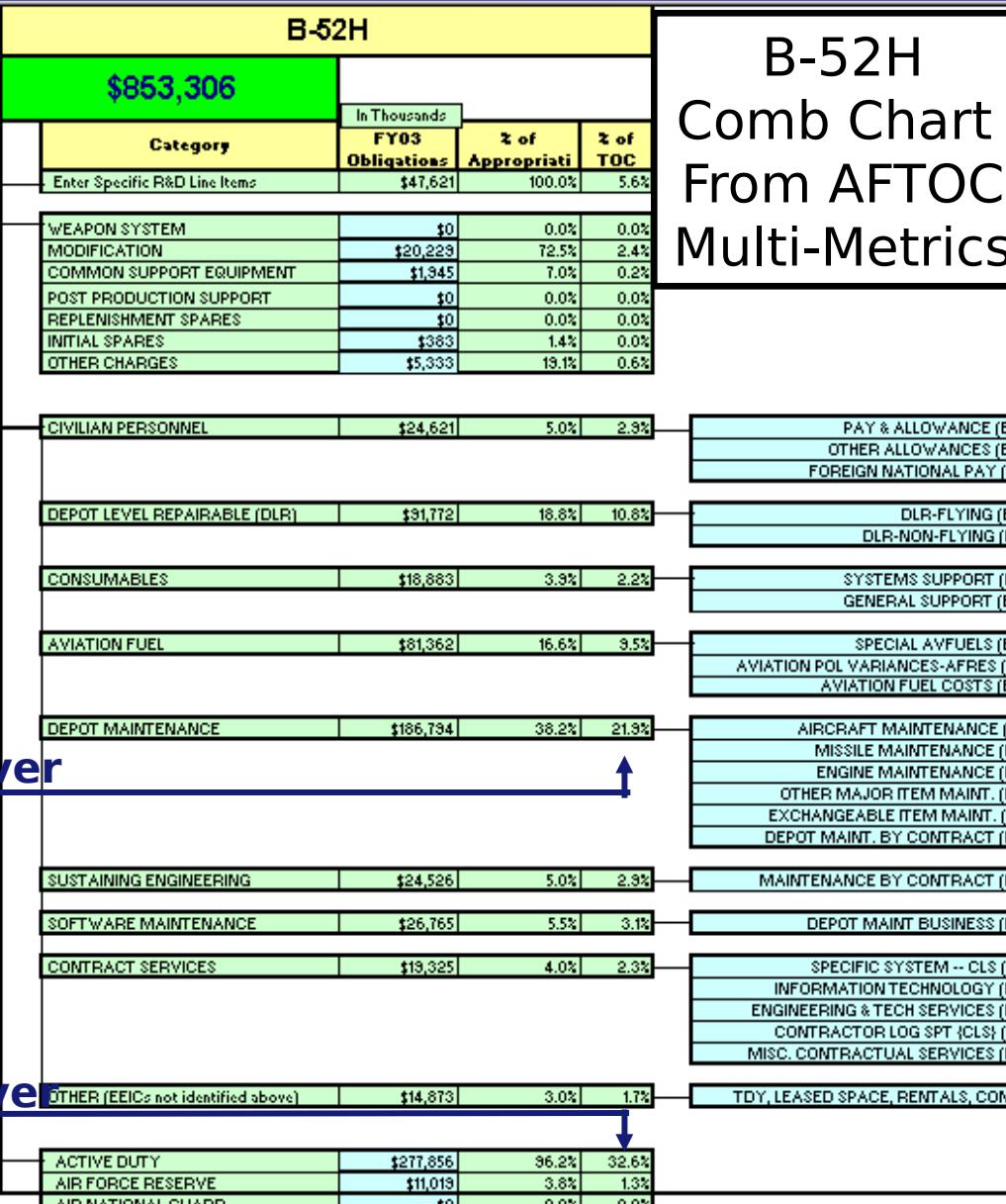
3. Implement Initiatives

Cost Savings Initiatives

- MAJCOM Approved
- Corp AF Vetted
- He who invests, saves, reinvests (Waterfall)

POM

Cost Profile in (Then Year) FY03 \$K :			B-52H			
Total Ownership Cost (TOC) Baseline			\$853,306			
TOTAL OWNERSHIP COST	Appropriation	FY03 Obligations	% of TOC	Category		
	RDTE	\$47,621	5.6%	Enter Specific R&D Line Items	\$47,621	100.0% 5.6%
	PROCUREMENT	\$27,890	3.2%	WEAPON SYSTEM	\$0	0.0% 0.0%
				MODIFICATION	\$20,229	72.5% 2.4%
				COMMON SUPPORT EQUIPMENT	\$1,345	7.0% 0.2%
				POST PRODUCTION SUPPORT	\$0	0.0% 0.0%
				REPLENISHMENT SPARES	\$0	0.0% 0.0%
				INITIAL SPARES	\$383	1.4% 0.0%
				OTHER CHARGES	\$5,333	19.1% 0.6%
	OPERATIONS & MAINTENANCE	\$488,920	57.3%	CIVILIAN PERSONNEL	\$24,621	5.0% 2.9%
# 2 Cost Driver					PAY & ALLOWANCE (EEIC 38X)	\$24,617 100.0% 2.9%
					OTHER ALLOWANCES (EEIC 38X)	\$4 0.0% 0.0%
					FOREIGN NATIONAL PAY (EEIC 51X)	\$0 0.0% 0.0%
				DEPOT LEVEL REPAIRABLE (DLR)	\$31,772	18.8% 10.8%
					DLR-FLYING (EEIC 644)	\$31,523 99.7% 10.7%
					DLR-NON-FLYING (EEIC 645)	\$248 0.3% 0.0%
				CONSUMABLES	\$18,883	3.9% 2.2%
					SYSTEMS SUPPORT (EEIC 605)	\$0 0.0% 0.0%
					GENERAL SUPPORT (EEIC 603)	\$18,883 100.0% 2.2%
				AVIATION FUEL	\$81,362	16.6% 9.5%
					SPECIAL AVFUELS (EEIC 630)	\$0 0.0% 0.0%
					AVIATION POL VARIANCES-AFRES (EEIC 631)	\$0 0.0% 0.0%
					AVIATION FUEL COSTS (EEIC 633)	\$81,362 100.0% 9.5%
				DEPOT MAINTENANCE	\$186,794	38.2% 21.9%
					AIRCRAFT MAINTENANCE (EEIC 541)	\$128,797 69.0% 15.1%
					MISSILE MAINTENANCE (EEIC 542)	\$0 0.0% 0.0%
					ENGINE MAINTENANCE (EEIC 543)	\$53,280 28.5% 6.2%
					OTHER MAJOR ITEM MAINT. (EEIC 544)	\$23 0.0% 0.0%
					EXCHANGEABLE ITEM MAINT. (EEIC 545)	\$538 0.3% 0.1%
					DEPOT MAINT. BY CONTRACT (EEIC 560)	\$4,155 2.2% 0.5%
				SUSTAINING ENGINEERING	\$24,526	5.0% 2.9%
					MAINTENANCE BY CONTRACT (EEIC 583)	\$24,526 100.0% 2.9%
				SOFTWARE MAINTENANCE	\$26,765	5.5% 3.1%
					DEPOT MAINT BUSINESS (EEIC 540)	\$26,765 100.0% 3.1%
				CONTRACT SERVICES	\$19,325	4.0% 2.3%
					SPECIFIC SYSTEM - CLS (EEIC 578)	\$10,805 55.3% 1.3%
					INFORMATION TECHNOLOGY (EEIC 582)	\$50 0.3% 0.0%
					ENGINEERING & TECH SERVICES (EEIC 584)	\$0 0.0% 0.0%
					CONTRACTOR LOG SPT (CLS) (EEIC 585)	\$0 0.0% 0.0%
					MISC. CONTRACTUAL SERVICES (EEIC 592)	\$8,470 43.8% 1.0%
				OTHER (EEICs not identified above)	\$14,873	3.0% 1.7%
					TDY, LEASED SPACE, RENTALS, COMM, ETC.	\$14,873 100.0% 1.7%
				ACTIVE DUTY	\$277,856	36.2% 32.6%
				AIR FORCE RESERVE	\$10,019	3.8% 1.3%
				AIR NATIONAL GUARD	\$0	0.0% 0.0%



B-52H

Cost Summary

Metrics

O&S CPFH

Obligations

Cost Drivers

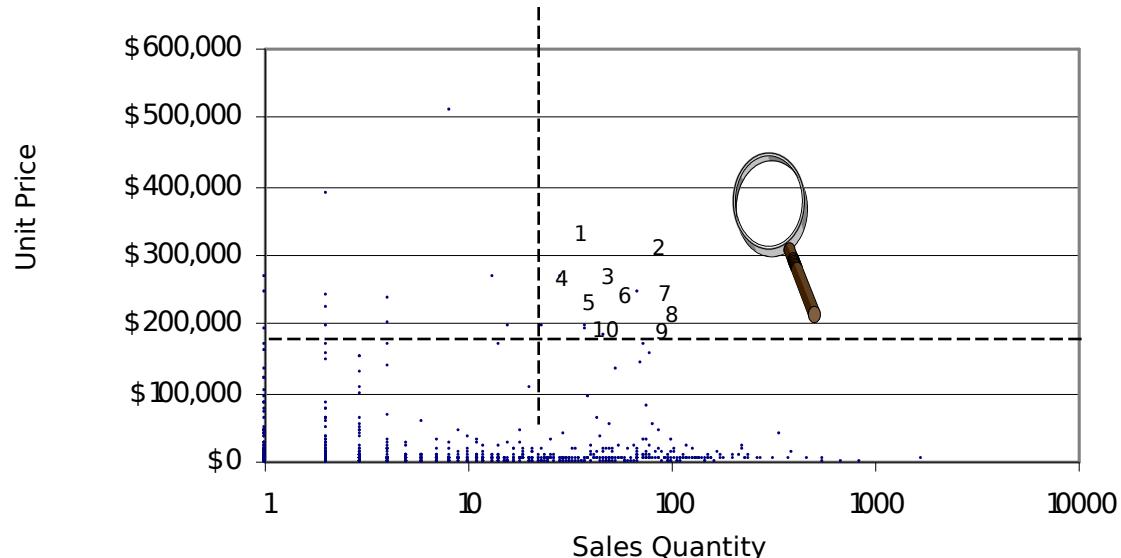
Comb Chart



High Cost/High Demand Drivers

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~~C-5 A/C Example From AFTOC~~



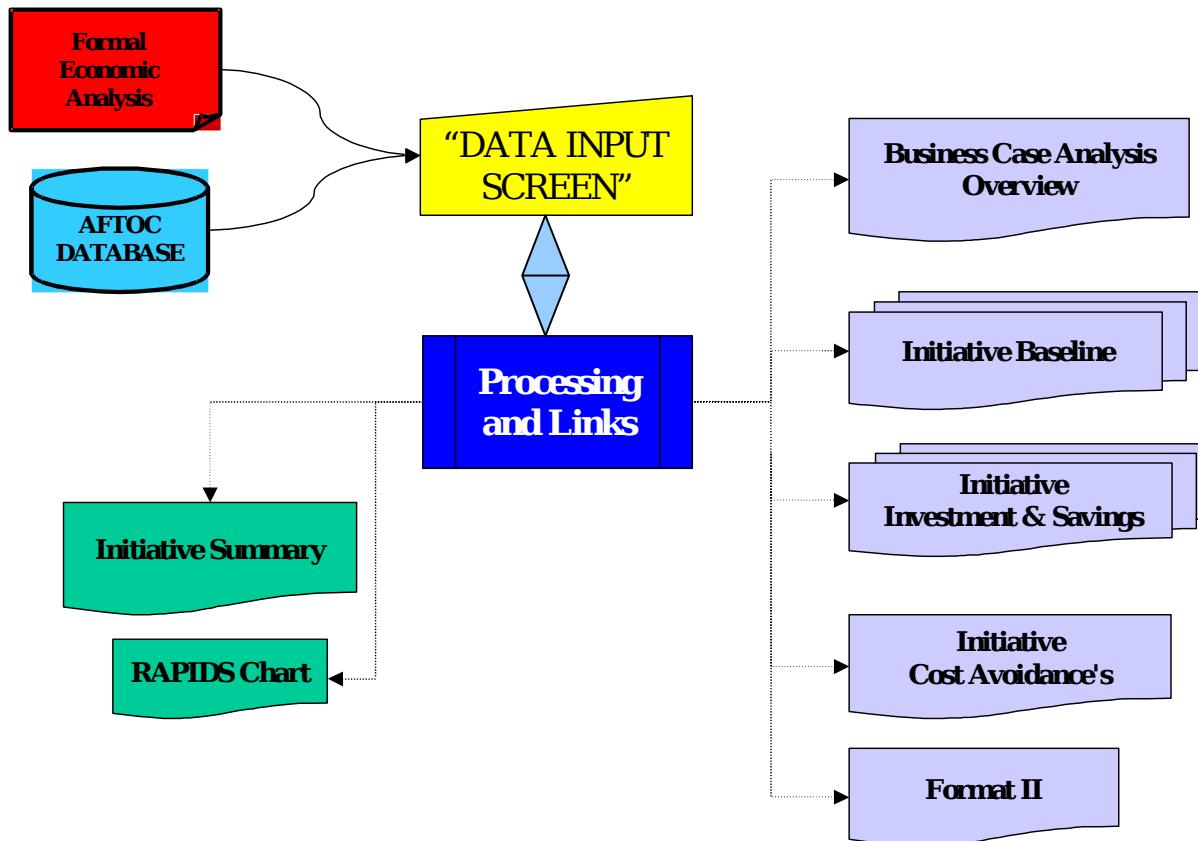
- Examine Upper Right Quadrant for High Leverage Cost Reduction Opportunities
- Pursuing 3rd Dimension to correlate w/ maintenance costs

Data Point	MD	NSN	Sales Qty	Unit Price	MSD Sales	Noun	End Item
1	C-5	2840014472512	28	\$269,277	\$7,539,767	ROTOR, COMPRESSOR,	ACFT ENG TF39 2J -TF39
2	C-5	1560004195879	68	\$244,114	\$16,599,770	THRUST REVERSER, AIR	C-5
3	C-5	2840013205345	38	\$195,933	\$7,445,454	NOZZLE ASSEMBLY, TUR	TF39 ACFT ENGINE,
4	C-5	2840010723526	23	\$195,933	\$4,506,459	VANE ASSEMBLY, FAN	TF39 ACFT ENG
5	C-5	2840012025327	37	\$190,432	\$7,045,970	CASE AND VANE ASSEMBLY	ACFT ENG TF39-GE1C
6	C-5	2840011997351	46	\$184,445	\$8,484,480	ROTOR, FAN, AIRCRAFT	TF39 ACFT ENG
7	C-5	2840014451881	72	\$170,216	\$12,255,527	NOZZLE ASSEMBLY, TUR	ACFT ENG TF39
8	C-5	2840012039530	77	\$158,748	\$12,223,624	VANE ASSEMBLY, FAN	ACFT ENG TF39-GE1C
9	C-5	1560006202517	70	\$141,993	\$9,939,502	COWLING	C-5
10	C-5	2840012163026	53	\$134,925	\$7,151,009	ROTOR, TURBINE, AIRCRAFT	TF39-GE-1C



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Business Case Analysis





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Historical AFTOC Data Pull

Weapon System	All Weapon System							
Command	All Command							
Appn	All Appn							
Budget Cycle	02 PB							
Program Element Code	All Program Element Code							
Obligations				Fiscal Year				
Level 02	Level 03	Level 04	Level 05	1997	1998	1999	2000	
Financial Summary	RDT&E			3,956,499,440.12	4,022,841,464.86	3,350,605,045.47	4,044,988,327.45	
	Procurement	Aircraft Weapon System		3,479,117,178.80	3,309,869,426.83	4,898,121,972.54	4,724,189,621.86	
		Modifications		1,599,745,574.83	1,426,668,378.87	1,705,248,711.69	1,878,015,955.41	
		Common Spt Equipment		172,182,564.70	143,994,828.28	141,658,227.23	152,100,662.30	
		Post Production Support		82,203,630.60	45,313,816.48	273,962,483.04	145,544,492.71	
		Replenishment Spares		94,673,816.74	56,840,030.45			
		Initial Spares		56,147,368.39	280,331,752.42	504,705,334.14	346,394,615.43	
		Other Charges		384,056,569.96	424,112,454.40	394,314,251.24	527,697,917.64	
	Procurement Total *			5,868,126,704.02	5,687,130,487.73	7,718,010,979.88	7,773,943,265.35	
	O&M	Civilian Person	EEIC 383**	1,948,542.88	1,826,485.83	874,030.59	297,055.66	
			EEIC 384**	2,798,527.41	3,676,876.52	3,486,942.98	2,627,432.00	
			EEIC 385**		90.00	299,635.30	333,708.98	
			EEIC 386**	27,362.53	25,836.69	22,091.68	27,536.18	
			EEIC 391**	6,258,446.67	7,807,034.28	7,022,462.87	7,883,924.64	
			EEIC 392**	1,323,916,645.11	1,336,436,999.64	1,363,405,354.82	1,426,419,066.96	
			EEIC 393**	316,787,480.35	331,677,763.85	352,654,027.47	381,125,309.85	
			EEIC 394**	192,587.49	471,158.10	388,864.40	425,900.15	
			EEIC 395**	5,614,255.44	7,003,367.61	7,534,285.50	7,106,121.64	
			EEIC 396**	5,785,537.50	6,336,134.91	6,594,831.18	6,908,131.49	
			EEIC 397**	101,866.21	47,860.74	39,587.36	55,787.22	
			EEIC 511**	1,331,393.05	1,258,668.38	1,285,794.84	1,455,490.39	
			EEIC 515**	3,181.59			1,101.67	
	Civilian Personnel Total *			1,664,765,816.23	1,696,568,278.55	1,743,607,909.00	1,834,666,566.83	
	DLRs	EEIC 644**		1,790,402,678.55	2,241,996,417.76	2,711,758,777.25	2,759,108,985.00	
		EEIC 645**		15,374,643.28	30,373,612.28	19,267,341.82	25,548,680.59	
	DLRs Total *			1,805,777,321.83	2,272,370,030.04	2,731,026,119.07	2,784,657,665.59	
	Consumables	EEIC 605**		158,964,489.63	194,599.51	43.60	967,017.46	
		EEIC 609**		567,296,754.48	669,653,668.73	745,277,981.75	749,038,329.32	
	Consumables Total *			726,261,244.11	669,748,268.24	745,278,025.38	750,005,346.78	
	AV Fuel	EEIC 699**		2,115,625,391.12	2,081,741,000.00	1,802,764,000.00	1,376,422,000.00	
	AV Fuel Total *			2,115,625,391.12	2,081,741,000.00	1,802,764,000.00	1,376,422,000.00	
	Depot Maint	EEIC 541**		905,314,625.37	1,054,176,250.56	1,093,621,278.39	1,055,408,130.86	
		EEIC 543**		425,259,514.13	595,641,045.29	537,550,602.53	477,069,308.72	
		EEIC 544**		2,819,428.00	4,265,175.82	2,892,297.00	4,746,642.00	
		EEIC 545**		8,223,672.00	5,370,157.00	9,512,768.00	8,771,974.00	
	Depot Maintenance Total *			1,341,617,239.50	1,659,452,628.67	1,643,576,945.92	1,545,995,955.58	

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Weapon System Baseline

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WEAPON SYSTEM BASELINE										AFTOC Data Sources Used:			
Program Office:		c-130 spo					WSC:		c-130 spo				
Program POC:		name, phone, email address					OACs:		ALL				
Financial Year:		Data in ("THEN YEAR") Dollars (\$K):					PECs:		ALL				
AS OF:		G4 - 2000											
TITLE		Obligations		Current BA		Budget Authority from the most recent President's Budget							
FY 98		FY 99		FY 00		FY 01		FY 02		FY 03			
RDT&E		4,187		11,959		16,328		-		117,106			
WEAPON SYSTEM R&D LINE		4,187		11,959		16,328		-		117,106			
PROCUREMENT		240,246		387,639		272,899		-		389,792			
AIRCRAFT WEAPON SYSTEM		73,986		111,503		109,584		-		206,326			
MODIFICATION		128,243		109,762		136,417		-		97,476			
COMMON SUPPORT EQUIPMENT		7,187		7,261		7,433		-		17,187			
POST PROCUREMENT SUPPORT		-		-		-		-		17,188			
REINSTATEMENT SPARES		4,257		-		-		-		1,361			
INITIAL SPARES		14,560		66,426		3,299		-		15,010			
OTHER		12,013		12,685		15,959		-		43,432			
OPERATIONS AND MAINTENANCE		1,292,650		1,245,181		1,491,598		-		1,352,321			
CIVILIAN PERSONNEL		315,367		333,010		356,048		-		414,866			
PAY & ALLOWANCE (EEIC 39X)		313,266		331,818		354,245		-		414,035			
OTHER ALLOWANCES (EEIC 38X)		1,587		652		1,179		-		340			
FOREIGN NATIONAL PAY (EEIC 51X)		494		530		623		-		491			
DEPOT LEVEL REPAIRABLE (DLR)		162,381		209,771		184,017		-		164,813			
DLR-FLYING (EEIC 644)		158,394		205,762		182,747		-		177,100			
DLR-NON-FLYING (EEIC 645)		5,956		4,009		1,270		-		7,713			
CONSUMABLES		81,720		93,512		87,105		-		87,620			
SYSTEMS SUPPORT (EEIC 60502 & 60507)		35		-		1		-		333			
GENERAL SUPPORT (EEIC 60902 & 60907)		81,685		93,512		87,104		-		87,287			
AVIATION FUEL		205,485		36,322		181,778		-		143,321			
SPECIAL AVI FUELS (EEIC 690)		-		-		-		-		-			
AVIATION POLY(VARANCES-AFRES) (EEIC 691)		-		-		-		-		-			
AVIATION FUEL COSTS (EEIC 699)		205,485		36,322		181,778		-		143,321			
DEPOT MAINTENANCE		181,293		210,570		212,241		-		224,861			
AIRCRAFT MAINTENANCE (EEIC 541)		103,867		110,631		119,229		-		123,868			
MISSILE MAINTENANCE (EEIC 542)		-		-		-		-		136,501			
ENGINE MAINTENANCE (EEIC 543)		76,978		98,476		91,411		-		98,379			
OTHER MAJOR ITEM MAINTENANCE (EEIC 544)		93		530		643		-		1,794			
EXCHANGEABLE ITEM MAINT. (EEIC 545)		356		934		758		-		620			
SUSTAINING ENGINEERING		11,459		9,762		8,371		-		10,263			
MAINTENANCE BY CONTRACT (EEIC 583)		11,459		9,762		8,371		-		10,263			
SOFTWARE MAINTENANCE		23,722		35,082		32,164		-		34,147			
DEPOT MAINT BUSINESS (EEIC 540)		23,722		36,082		32,164		-		34,147			
CONTRACT SERVICES		156,170		184,808		248,335		-		132,406			
SPECIFIC SYSTEM -- CLS (EEIC 576)		18,991		20,210		84,880		-		26,897			
INFORMATION TECHNOLOGY (EEIC 582)		1,530		1,945		504		-		3,281			
ENGINEERING & TECH SERVICES (EEIC 594)		609		661		663		-		1,459			
CONTRACTOR LOGISTICS SUPPORT (EEIC 585)		-		2,155		-		-		459			
MISC. CONTRACTUAL SERVICES (EEIC 592)		135,041		159,857		162,088		-		100,283			
OTHER (EEICs not identified above)		155,083		131,324		121,537		-		120,934			
TDY, LEASED SPACE, RENTALS, COMM, ETC.		155,083		131,324		121,537		-		121,468			
MISC. OTHER EEICs		-		-		-		-		-			
BASELINE COST		1,537,083		1,564,779		1,721,214		-		1,851,129			
MILITARY PERSONNEL		678,596		717,880		778,868		-		832,431			
ACTIVE DUTY		428,682		424,700		460,777		-		491,645			
AIR FORCE RESERVE		79,222		81,153		88,210		-		113,501			
AIR NATIONAL GUARD		170,691		212,027		229,681		-		227,286			
BASELINE COST w/ MIL Pers		2,215,679		2,282,659		2,499,882		-		2,683,560			
BASELINE COST w/ MIL Pers		2,215,679		2,282,659		2,499,882		-		2,683,560			
BASELINE COST w/ MIL Pers		2,215,679		2,282,659		2,499,882		-		2,683,560			
BASELINE COST w/ MIL Pers		2,215,679		2,282,659		2,499,882		-		2,683,560			
BASELINE COST w/ MIL Pers		2,215,679		2,282,659		2,499,882		-		2,683,560			

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Sample RAPIDS Chart

Enter the Proposed Initiative Title											
BACKGROUND "ENTER A BRIEF DESCRIPTION OF THE INITIATIVE SUCH AS:" The recommended Alternative (initiative 9999) is a											
ADJUSTMENT Savings from initiative will be realized by ... (The INITIATIVE POC must show specifically how savings will be tracked manually).											
FUNDING (\$M):		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		
CURRENT PROGRAM		0	0	0	0	0	0	0	0		
ADJUSTMENT		0	0	0	0	0	0	0	0		
Revised PGM TOTAL		0	0	0	0	0	0	0	0		
PROCUREMENT						MANPOWER					
FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007						FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
						OFFICER					
						ENLISTED					
						CIVILIAN					
IMPACTS:											
CINC IPL: (yes or no) DPG: (yes or no) APPG: (yes or no) MAJCOM Ranking # _____											
- Failure to fund this initiative will put this program at risk and will cause an increase of \$XXX in Annual O&S Cost											
- _____											
- _____											
- _____											
- _____											
- _____											
- _____											
- _____											

UNCLAS
CSI-NAME OF INITIATIAVE

BACKGROUND:

Initiative (replaces, avoids, upgrades, maintains, increases, decreases, etc --- three line description of the initiative and why it is needed.)

ADJUSTMENT:

Fixes (funds, increases, provides, offsets etc. This will be a two line description of the funding adjustment. Normally MAJCOMs will have one chart for the plus-up and one chart for the saving offset. Offset # minuses)

FUNDING	02A2I450AN	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
(\$M) CURRENT PROGRAM		6.1	2.5	7.3	0.0	0.0	0.0
ADJUSTMENT		43.5	12.4	-5.2	4.4	0.0	0.0
REVISED PGM TOTAL		49.6	14.9	2.1	4.4	0.0	0.0

PROCUREMENT	FY02	FY03	FY04	FY05	FY06	FY07	MANPOWER	FY02	FY03	FY04	FY05	FY06	FY07
Kit Buys	NT	3	0	0	0	0	OFFICER	0	0	0	0	0	0
Kit Installs	0	3	0	0	0	0	ENLISTED	0	0	0	0	0	0
							CIVILIAN	0	0	0	0	0	0

IMPACTS:

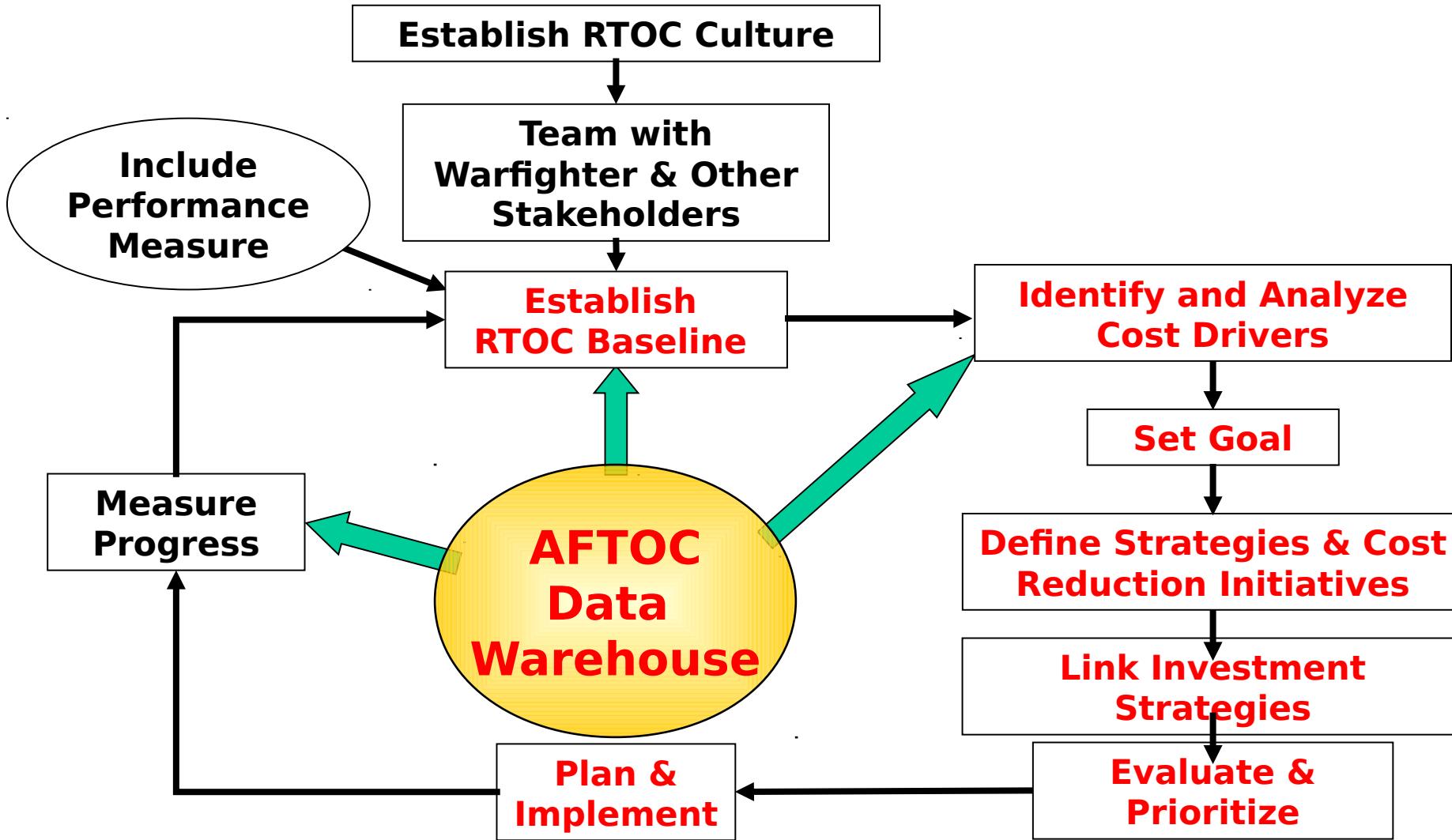
CINC IPL: (yes or no) DPG: (yes or no) APPG: (yes or no) MAJCOM Ranking:
#2 (AC2ISRC)

- Failure to complete puts..... at risk
- Full \$800M in life cycle costs saved (or avoided); replaces MIL SPEC with COTS, per SECDEF direction
- Increased mission readiness and CINC support; mission aircraft not used as substitute for lack of simulators, mission planning, database build, software development and maintenance
- Eliminates multiple configurations; increases acft availability and standardizes capability, keeps 20% of fleet from being UNCLASlogistically unsupportable



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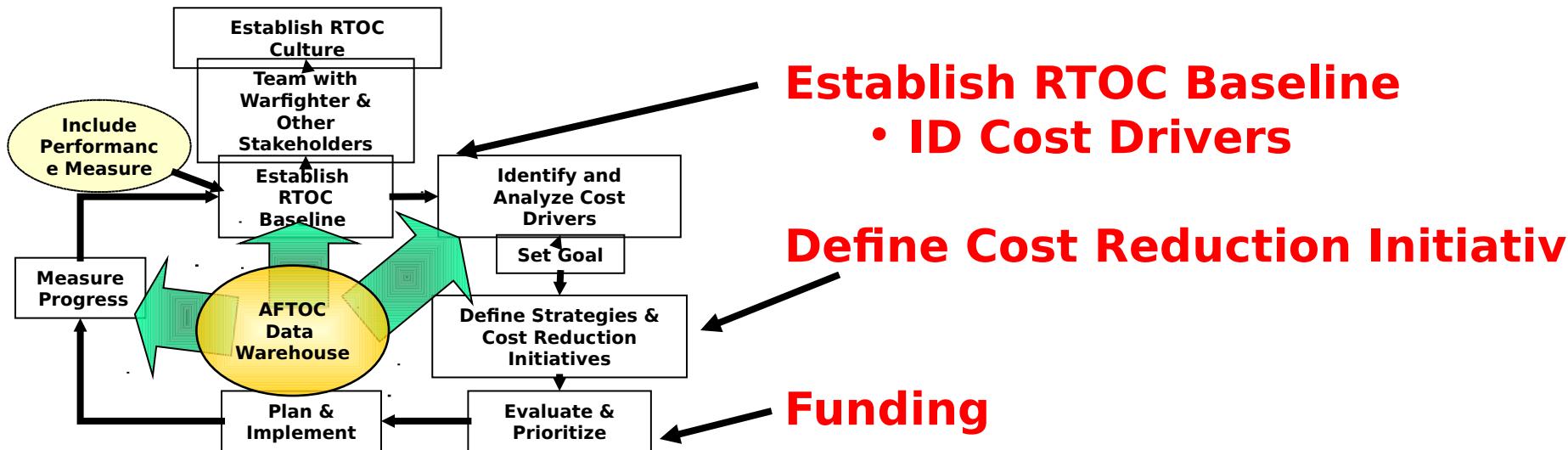
RTOC Process





Building an Initiative

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- Standardized format for documenting and submitting CRIs
 - Summary of trade study and economic analysis of alternatives
 - Facilitates modernization planning and PPBS
- Required Investment and projected savings/avoidances
- Calculates standard financial measures of merit - NPV,

SIR

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For AFTOC Initiatives, see "AFTOC Initiatives" presentation



What AFTOC Brings to the Table

Data Sources





Now You Have A Good Business Case - What Are Your Funding Vehicles?

1. Service Process

- AF Warfighting Commands**

2. Supplemental Sources

- Warfighter Rapid Acquisition Process (WRAP)**
- Advanced Concept Tech Demonstration (ACTD)**
- Reduction in Total Ownership Cost (RTOC)**
- Program Budget Decision (PBD)**

3. Fall Out - End of Year

- Just in Case**

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How to Market Your Business Case?

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- **Savings vs. Avoidance (In a Budgetary Environment)**
- **Know Your Audience (AF Corp Structure)**
 - **Have to Sell to Your Audience**
 - **R&D Investment vs. O&M “Savings”**
 - **Assessment of Military Utility or Value**
 - **Cross Plot and Prioritize**
 - **Show a Strategy to Keep the “Savings”**
 - **Waterfall Charts**
 - **Show Specific Recommendations**
 - **Drive to Closure**



Cost Savings Initiative

Investment-Reinvestment “Waterfall”

<u>PBD 721</u>	<u>FY 01 PB</u>							<u>Total</u>
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	
B-1B DTOs								
Investment	1.6	1.3	3.1	0.8	0.0	0.0	0.0	6.8
Savings	-0.9	0.0	0.0	-0.8	-2.2	-2.2	-2.2	-8.3
F-117 (Engine Increased Build)								
Investment	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Savings	0.0	-1.5	-2.5	-2.5	-3.5	-3.5	0.0	0.0
KC-135 (Turbine Engine Monitoring System)								
Investment	1.4	1.4	0.0	0.0	0.0	0.0	0.0	2.8
Savings (AFCAIG)	0.0	-2.7	-6.0	-9.7	-10.4	-11.2	-12.5	-52.5
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POM Funded Disconnect	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>POM</u>			
J STARS (Computer Replacement Program)						<u>FY06</u>	<u>FY07</u>	<u>Total</u>
Investment	43.5	12.4	15.2		4.4	0.0	0.0	75.5
Cost Avoidance	-9.1	-21.1	-31.3		-33.4	-24.4	-25.2	-144.5
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POM Funded CSMIs								
LANTIRN Slip Ring								
Investment	1.5	1.6	0.0		0.0	0.0	0.0	3.1
Savings (AFCAIG)	-0.8	-2.1	-2.1		-2.1	-2.1	-2.1	-11.3
LANTIRN NESA								
Investment	0.0	0.9	2.5	2.1	0.0	0.0	0.0	5.5
Savings (AFCAIG)	0.0	0.0	-1.1	-2.3	-2.9	-2.9	-2.9	-9.2
Non-AFCAIG Savings	-1.5	-2.5	-3.3	-5.7	-5.7	-2.2	-20.9	



U.S. AIR FORCE

Summary

- **A Good Business Case:**

- **Balance of Cost vs. Utility or “Warfighter” Value**
- **Articulate Impact of Action vs. Inaction**
- **Market to Your Audience**
- **Bring it to Closure - The Ball is in Their Court**

Remember the Golden Rule!